

136220-65 EWG(j)/EWA(k)/FBD/EWT(i)/EEC(k)-2/EEC(t)/T/EEC(b)-2/EWP(k)/EWA(m)-2/
 n-4/Pc-4/Pf-4/Pe-4/Pi-4/P1-4 IJP(c) WS
 ACCESSION NR: AP5007102 S/0109/65/010/003/0552/0554

AUTHOR: Vlasov, S. N.; Talanov, V. I.

TITLE: Selection of axial modes in open resonators

SOURCE: Radiotekhnika i elektronika, v. 10, no. 3, 1965, 552-554

TOPIC TAGS: laser, laser mode, laser resonator 25

ABSTRACT: The selectivity of several types of open laser resonators are compared on the basis of the effect of $\ln T_0$ upon the discrimination parameter d which is given by: $d = \ln(T_0 / T_1)$, where T_0 and T_1 are the power-transmission coefficients for the same modes per one travel of the wave beam through the resonator. The quantity $\ln T_0$ is proportional to the population difference necessary to compensate the diffraction attenuation of the zero mode. These two-dimensional resonators are compared: a) confocal, b) plane or concentric, c) special confocal, and d) cylindrical-mirror. Conclusions: 1) A gradual

Card 1/2

L 36220-65

ACCESSION NR: AP5007102

decrease in the reflection factor toward the mirror edge impairs the filtration degree of transverse modes. 2) The discrimination parameter increases with the diffraction loss. 3) The confocal resonator with mirrors having a constant reflection factor has maximum selectivity. Orig. art. has: 1 figure and 4 formulas. [03]

ASSOCIATION: none

SUBMITTED: 07 May 64

ENCL: 00

SUB CODE: EC

NO REF SOV: 003

OTHER: 004

ATD PRESS: 3/220

Card 2/2 *jer*

L 55034-65

ACCESSION NR: AP5013350

UR/0109/65/010/005/0953/0954
621.372.413:621.378

AUTHOR: Vlasov, S. N.; Talanov, V. I.

TITLE: Confocal resonator with an arbitrarily positioned diaphragm

SOURCE: Radiotekhnika i elektronika, v. 10, no. 5, 1965, 953-954

TOPIC TAGS: resonator, mirror resonator

ABSTRACT: With arbitrary radii of the mirrors, the investigation of the electro-dynamic model of an open-type resonator can be reduced to an analysis of the well-known results for diaphragm-type mirrors only in the case of certain positions of the diaphragm inside the resonator. The present short article proves mathematically that the above simplification of the investigation is also possible in the general case of a resonator formed by the identical confocal reflectors. The results are extended over the cases of rectangular and round apertures in the diaphragm. Orig. art. has: 8 formulas.

ASSOCIATION: none

SUBMITTED: 09Jul64

ENCL: 00

SUB CODE: EC

NO REF SOV: 003

OTHER: 004

Card 1/1

L 55996-65 EWT(1)/EEC(b)-2/EWA(h) Pm-4/Pac-4/Peb/P1-4/Pj-4

ACCESSION NR: AP5015820

UR/0109/65/010/006/1150/1153
621.372.413

AUTHOR: Averbakh, V. S.; Vlasov, S. N.; Talanov, V. I.

TITLE: Effect of first- and second-order aberrations on the characteristics of an open resonator

SOURCE: Radiotekhnika i elektronika, v. 10, no. 6, 1965, 1150-1153

TOPIC TAGS: resonator, phase aberration, millimeter band resonator

ABSTRACT: General characteristics of the solutions of the problem formulated in the title are analyzed, and some numerical and experimental results are reported; the problem was formulated by A. G. Fox and T. Li (Proc. IEEE, 1963, 51, 80). Generalized symmetry relations are derived for misaligned mirrors; the near-plane resonators are more sensitive to symmetrical misalignments. The fundamental equations were investigated in detail by solving them numerically on a digital computer by the iteration method. The theoretical results were

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L 55996-65
ACCESSION NR: AP5015820

verified by experimentation with open resonators at a wavelength of 8 mm; both
cw and pulse (after J. P. Cristian and G. Goubau, IRE Trans., 1961,
AP-9, 256) methods were used. The pulse resonator was formed by a spherical
mirror (600 cm radius) and a plane 120-cm-diameter mirror. The cw
resonator consisted of identical 50-cm-radius mirrors. Both outfits used square
masks on the mirrors. "The authors wish to thank S. F. Morozov and L. V.
Piskunova who performed all necessary computations on a BESM-2 computer."
Orig. art. has: 2 figures and 7 formulas. [03]

ASSOCIATION: none

SUBMITTED: 16 Jul 64

ENCL: 00

SUB CODE: EC

NO REF SOV: 003

OTHER: 004

ATD PRESS: 4034

Card

2/2

L 40925-65 EWT(1)

ACCESSION NR: AP5007310

S/0057/65/035/003/0571/0573

AUTHOR: Kondrat'yev, I.G.; Talanov, V.I.

TITLE: Application of Lorentz' lemma to the calculation of the radiation fields of given sources in infinite media

SOURCE: Zhurnal tekhnicheskoy fiziki, v.35, no.3, 1965, 571-573

TOPIC TAGS: radiation field, anisotropic medium, mathematical method

ABSTRACT: A method is outlined for calculating the radiation field of an arbitrary source distribution in an infinite, linear, homogeneous, but not necessarily isotropic and possibly gyrotropic medium. The method employs the lemma of Lorentz relating the fields and their sources in one medium to those in the "transposed" medium, described by the transposed dielectric and permeability tensors, and represents a natural generalization to infinite media of the method of L.A.Vaynshteyn (ZhTF 23,654,1963) for treating the excitation of waveguides. The radiation field is expanded in a series of normal plane waves and the expansion coefficients, assumed to be slowly varying functions of position, are obtained with the aid of Lorentz' lemma by choosing normal plane waves as the "test" field in the "trans-

Card 1/2

L. 40925-65

ACCESSION NR: AP5007310

2
posed" medium. The method has the advantage over methods based on the usual reciprocity theorem that a knowledge of the fields of elementary sources is not required. The method can also be employed in the case of a nonuniform medium. "The authors are grateful to M.A. Miller for valuable discussions." Orig.art.has: 6 formulas.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut, Gor'kiy (Radio-physics Scientific Research Institute, Gorky)

SUBMITTED: 16Jun64.

ENCL: 00

SUB CODE: EM

NR REF SOV: 005

OTHER: 005

Card 2/2 *huc*

12. Moshel'sham's papers on the theory of optical images,
and other dioptrics. Map. no. 27 no. 12, 28 5' 5.
(MMA 1749)

10 июня
(с 10 до 16 часов)

Ю. Е. Муравьев
Новый метод приближенного решения интегрального уравнения теории антенн

В. И. Таланов
К вопросу о возбуждении дальномерных антенн

О. Г. Вечев
Система антенн с антеннами с нелинейными элементами

10 июня
(с 18 до 22 часов)

Г. И. Фролов
Фокусирующие свойства дифракционных антенн (резонаторов)

А. Н. Чепов
Метод измерения коэффициента направленного действия антенн на малых расстояниях

10

Е. С. Маджидов
М. А. Гусевский
Влияние условий распространения на антенны, расположенные на поверхности, использующие классический расчет антенн в трансформации

С. П. Белозубов
Антенны с антеннами для тропосферной связи

В. Д. Кузнецов
А. М. Киреев
Система многолучевых антенн с использованием элементов по радиотехническим антеннам

11 июня
(с 10 до 16 часов)

П. С. Михалев
Дифракция электромагнитных волн на поверхности сферической антенны

В. С. Мухомов
Расчет нелинейного нелинейного антенного устройства

В. М. Бессонов
О статистических характеристиках коэффициента отражения антенн в случайном неоднородном поле излучения

11

report submitted for the Centennial Meeting of the Scientific Technological Society of
Radio Engineering and Electrical Communications in A. S. Popov (VNIIE), Moscow,
8-12 June, 1959

ANDRIANOV, K.A.; VOLKOVA, L.M.; TALANOV, V.N.

Ammonolysis reaction of α, ω -dichlorodimethylsiloxane. Izv.
AN SSSR. Ser. khim. no.11:2045-2047 N '63. (MIRA 17:1)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

AMERIANOV, K.A.; TALANOV, V.N.; KHANANASHVILI, L.M.; SOBOLEV, Ye.S.

Interaction of α,ω -dichlorodimethylsiloxanes with ethylamine
and diethylamine. Izv. AN SSSR. Neorg. mat. 1 no.11:1849-
1852 N '65. (MIRA 18:12)

I. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni
M.V. Lomonosova. Submitted June 3, 1965.

ZUBER, Eustachy; KAWALEC, Stefan; MALEC, Witold; TALANOV, Wilhelm

An epidemic of angina in the MSW Sanatorium in Cieplice
in 1963. Przegl. epidem. 18 no.3:369-370 '64

1. Z Wojewodzkiego Zarzadu Sluzby Zdrowia MSW we Wroclawiu.

PHASE I BOOK EXPLOITATION

SOV/4441

Voprosy rascheta elementov aviatsionnykh konstruktsiy; raschet trekhsloynnykh paneley i obolochek, sbornik statey, no. 2 (Problems in Calculating Aircraft Construction Elements; Calculation of Sandwich Panels and Shells, Collection of Articles, No. 2) Moscow, Oborongiz, 1959. 135 p. Errata slip inserted. 1,900 copies printed.

Eds.: A. Ya. Aleksandrov, Doctor of Technical Sciences, Professor, and L.M. Kurshin, Candidate of Technical Sciences; Managing Ed.: A.S. Zaymovskaya, Engineer; Ed. of Publishing House: P.B. Morozova, Tech. Ed.: V.I. Oreshkina.

PURPOSE: This book is intended for engineers, designers, scientific workers and students.

COVERAGE: The book is a collection of 10 articles dealing with theoretical and experimental investigation of the strength of sandwich constructions with light-weight fillers of the foamed-plastic type and rigid fillers of the corrugated and honeycomb type. The articles discuss the general rigidity of sandwich plates and cylindrical shells during longitudinal compression; simultaneous bending, compression and shear of plates; local rigidity; problems in the determination

Card 1/3

Problems in Calculating Aircraft Construction (Cont.) SOV/4441

Bryukker, L.E. Approximate Solutions of Some Problems in the Longitudinal and Transverse Bending of Sandwich Plates With Rigid Orthotropic Fillers 98

Aleksandrov, A.Ya., and L.M. Kurshin. Compression of an Underpropped Plate 114

Aleksandrov, A.Ya. L.M. Kurshin and A.P. Prusakov. On the Selection of Parameters for Sandwich Plates With Lightweight Fillers Subjected to Compression 125

Aleksandrov, A.Ya., and L.E. Bryukker. Results of Tests of Rectangular Sandwich Plates for Longitudinal Compression 131

AVAILABLE: Library of Congress

Card 3/3

AC/rn/gmp
10-27-60

ALEKSEYEV, A.Ya.; SAVVINA, G.S.; TALAKOVA, E.M.

Local compressive strength of sandwich plates with a corrugated
wall. Vop.rasch.alem.aviats.konstr. no.2:27-42 '59.
(MIRA 12:6)

(Elastic plates and shells)

KITAYGORODSKAYA, O.D., professor; KUSTAREVA, K.S., nauchnyy sotrudnik;
TALANOVA, I.K., nauchnyy sotrudnik

Ultraviolet rays in complex therapy of acute rheumatism in children.
Pediatriia no.5:44-50 S-O '54. (MLRA 7:12)

1. Iz detskogo otdeleniya (zav. prof. O.D.Kitaygorodskaya) Nauchno-issledovatel'skogo insituta fizioterapii (dir. prof. A.N.Obrosof)
(RHEUMATIC FEVER, in infant and child,
ther., ultraviolet rays)
(ULTRAVIOLET RAYS, therapeutic use,
rheum. fever in child.)

ZABALUYEVA, A.P.; TALANOVA, I.K.; DEMINA, D.M.

Results of preventive irradiation of young school children in the schoolroom with erythema-dose lamps and in photaria with PRK-7 lamps. Vop.kur., fizioter. i lech.fiz.kul't. no.4:22-26 O-D '55. (MIRA 12:12)

1. Iz nauchno-issledovatel'skogo instituta fizioterapii Ministerstva zdravookhraneniya RSFSR (dir. - prof. A.N. Obrosoy) i Instituta obshchey i kommunalnoy gigiyeny AMN SSSR (dir. - deystvitel'nyy chlen AMN SSSR prof. A.N. Sysin).

(ULTRAVIOLET RAYS, therapeutic use,
prev. irradiation of school child.)

TALANOVA, I.K.
TALANOVA, I.K.

Dynamics of motor chronaxy in rheumatic children following treatment with ultraviolet rays. Vop.kur.fizioter. i lech.fiz. kul't. 22 no.4:26-31 J1-Ag '57. (MIRA 10:11)

1. Iz Nauchno-issledovatel'skogo instituta fizioterapii Ministerstva zdravookhraneniya RSFSR (dir. - prof. A.N.Obrosov)
(RHEUMATIC FEVER) (CHRONAXIA)
(ULTRAVIOLET RAYS--THERAPEUTIC USE)

TALANOVA, I. K., Candidate Med Sci (diss) -- "Ultraviolet radiation as a factor
in strengthening the health of school-age children". Moscow, 1959. 16 pp
(State Sci Res Inst of Spa Studies and Physio therapy of the Min Health USSR)
(KL, No 22, 1959, 123)

TALANOVA, I.K.

Strengthening effect on children of a stay in summer health camps.
Vop. kur., fizioter. i lech. fiz. kul't. 24 no.6:516-521 N-D '59.
(MIRA 1541)

1. Iz otdela profilaktiki (zav. - kandidat meditsinskikh nauk
G.A.Nevrayev) Nauchno-issledovatel'skogo instituta fizioterapii
Ministerstva zdravookhraneniya RSFSR (dir. - chlen-korrespondent
AMN SSSR prof. A.N.Obrosoy).
(CHILDREN-CARE AND HYGIENE)

3. KISHOVA, V. K. kand. med. nauk, dr. KISHOVA, A. K.,
 kand. med. nauk, red.; KISHOVA, V. A. kand. med.
 nauk, red.; KISHOVA, V. K. kand. med. nauk, red.;
 KISHOVA, I. K. kand. med. nauk, red.

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 Printed in the United States of America
 ISBN 0-471-82521-2

1. *Andrena. cf. munda* (Schk.) n. sp. (coll. 11).

EXCERPTA MEDICA Sec 19 Vol 2/11 Rehabilitation Nov 59

2395. Dynamics of motor chronaxie in children with rheumatism during treatment with ultraviolet rays (Russian text) TALANOVA I. N. *Vopr. Kurort.* 1957, 4 (26-31)

With the clinical chronaximetric method, the effect of UV rays on the functional state of the central nervous system in 36 children with rheumatism was studied. Twenty of the children were treated only with medicinal means, while 16 were additionally treated with UV irradiation. Signs of endomyocarditis were detected in all children, and acute rheumatic polyarthrititis in some of them. The most significant pathological shifts of chronaxie were found in patients with severe forms of rheumatism, and predominantly in children with weak and unbalanced nervous processes. Under the influence of the treatment, improvement of the patient's condition occurred and the indices of chronaxie became normal, first of all in the children subjected to irradiation (after 3 to 4 exposures). The beneficial effect of UV irradiation on the functional state of the central nervous system is stressed. (S)

TALANOVA, K S

Productivity level of arable stratum of peat-bog soils.
 S. G. Skoropanov and K. S. Talanova. *Izvest. Akad. Nauk
 Beloruss. S.S.R.* 1955, No. 4, 35-40 (in Russian).—Soil
 humidity, structural and aggregate soil compn., and the amts.
 of readily available P_2O_5 , K_2O , and NO_3 in the 0-10, 10-15,
 15-20, 20-40, and 40-60 cm. soil strata are given for the
 peat-bog soils of Byelorussia (White Russia). The pro-
 ductivity of the soils depends on the underground water
 layer (more fertile soils are those with the 2-m. layer and
 below) and on the amts. of free K, P, and NO_3 . The
 0-15-cm. arable soil stratum is the most fertile. E. W.

claw

2

TALACHA, K. S.

"Action of Granulated Superphosphate Under the Conditions of Liming in the Acid Turfpodzolic Soils of the Belorussian SSR." Card Agr Sci, Inst of Socialist Agriculture, Acad Sci Belorussian SSR, Minsk, 1954. (RZhBiol, No 8, Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SC: Sum. No. 556, 24 Jun 55

USSR/Soil Cultivation. Mineral Fertilizers.

J-3

Abs Jour: Ref. Zhur-Biologiya, No 1, 1958, 1238.

Author : Kedrov-Zikhman, O.K., Talanova, K.S.
Inst : Institute of Socialist Agriculture of the Academy of Sciences,
Bel SSR.
Title : The Action of Granular Superphosphate on the Yield of Agricultural
Crops as a Function of the Method of Its Application and in Connect-
ion with the Liming of Mildly Argillaceous Turf-Pest Podzolic Soils.

Orig Pub: Sb. nauch. trud. In-ta sots. s. kh. AN BSSR, 1956, No 4, 101-117.

Abstract: In two field experiments a comparison was made between the effects
of powdered and granulated superphosphate on unlimed soil and on
soil which had been limed with chalk (1.5 T/hectare). The first
experiment was set up on lupine fallow with a K base, the second
on an NK base. The superphosphate was applied as follows: the pow-
dered variety was scattered at the rate of 60 kg. P_2O_5 /hectare and

Card : 1/2

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APPROVED FOR RELEASE: 07/13/2001
POLAND/Soil Cultivation. Mineral Fertilizers.

CIA-RDP86-00513R001754730005-9"

Abs Jour: Ref. Zhur-Biologiya, No 1, 1958, 1243.

from vivianite when planted in podzolic soil with pH 5.3 as when
planted on weakly podzolic and humus-rich sandy loam with pH 7.3 --
i.e. 9.9% and 11.0% , while the corresponding results from phos-
phorite were 13.6% and 2.0%. In field experiments on lowland
sedge peat containing 0.38% P_2O_5 dry matter a comparison was made
between vivianite in doses of 45 and 90 kg./hectare and superphos-
phate in a dose of 45 kg./hectare P_2O_5 on a base of 100 kg. K_2O .
Over four years of experiments superphosphate increased the hay
yield by an average of 31.7 centners/hectare while vivianite in
a single dose increased it by 20.0 centners/hectare, and in a
double dose by 28.3 centners/hectare, the basic harvest being
52.0 centners/hectare. In another experiment on peat moss with
an average content of 0.37% P_2O_5 , when fertilizers, chosen for
[iz rascheta] their citrate-soluble phosphoric acid content,
were applied, the harvests achieved using vivianite were actually

Card : 2/3

-11-

USSR/Soil Science. Biology of Soils.

J-2

Abs Jour: Ref Zhur-Biol., No 6, 1958, 24699.

in 1 g, is observed in soils under potatoes, and the minimum (2.1-4.3 million in 1 g) - under 4 year timothy-grass. After the gathering of potatoes, the quantity of the microorganisms in the soil sharply diminished. Mobile forms of the organic substance in the soil are subject to significant changes. -humates have shown themselves to be the most dynamic; the maximal quantity of them is found in the spring, under perennial grasses. The quantity of -humates diminishes in proportion to the increase of the period during which the soil is under annual crops. Maximal quantities of nitrate N, found in spring in soils under potatoes and hemp, diminish toward the end of their vegetative season. The maximal quantity K -0.38 - 0.55%-

Card : 2/3

MASHTAKOV, S.M. [Mashtakou, S.M.]; PAROMCHIK, I.I. [Paromchyk, I.I.];
TALANOVA, K.S.

Effect of sodium salts of 2,4-D and 2M-4X on the photosynthesis and
respiration of corn hybrids and varieties. Vestsi AN BSSR.Ser.bial.
nav. no.2:43-49 '62. (MIRA 15:8)

(HERBICIDES) (PHOTOSYNTHESIS) (PLANTS--RESPIRATION)

CHUBUKOV, A.A.; IVANOV, A.V.; CHERNOGOROV, L.L.; Prihimali uchastiye:
KOGAN, I.L.; TALANOVA, L.N.; POPOVA, Ye.P.; ABROSOV, A.P.

Cleaning of spinnerets in the manufacture of viscose fibers.
Khim.volok. no.1:69-70 '63. (MIRA 16:2)

1. Rostovskiy nauchno-issledovatel'skiy institut tekhnologii
mashinostroyeniya.

(Rayon spinning)

MOISEYEV, S., inzh.po tekhnike bezopasnosti; KALINOVSKIY, P., mekhanik;
SHALOMOV, B., yuriskonsul't; TALANOVA, N., inzh.po tekhnike
bezopasnosti; BYCHKOVA, I., inzh.; VORONOV, A., elektrik; SOKOLENKO,
N.; KUTUZOV, P.; TOPYRIK, P., pensioner; FEDYUKOV, G., inzh.po
tekhnike bezopasnosti; CHECHETKIN, A.; KLIMENT'YEVA, Ye.

Those, who serve us. Okhr. truda i sots. strakh. 3 no.7:52-53 J1
'60. (MIRA 13:8)

1. Reydovaya brigada. 2. Moskhladokombinat imeni Mikoyana (for Moiseyev).
3. Upravleniye Mosgorplodoovoshch (for Kalinovskiy).
4. Tsentral'nyy universal'nyy magazin Voyentorga (for Shalomov).
5. Gosudarstvennyy universal'nyy magazin, Moskva (for Talantova).
6. Obshchestvennyy inspektor okhrany truda Mostorgstroya (for Bychkova).
7. Obshchestvennyy inspektor okhrany truda Mosrybokombinata (for Voronov).
8. Pravovoy inspektor Moskovskogo gorodskogo soveta profsoyuzov (for Sokolenko).
9. Obshchestvennyy inspektor okhrany truda kholodil'nika No.1, Moskva (for Kutuzov).
10. Moskovskiy rybokombinat (for Fedyukov).
11. Korrespondent gazety "Sovetskaya trgovlya" (for Chechetkin).
12. Zaveduyushchaya otделom profsoyuznoy zhizni gazety "Sovetskaya trgovlya" (for Kliment'yeva).
13. Spetsial'nyy korrespondent zhurnala "Okhrana truda i sotsial'-noye strakhovaniye" (for Gromov).

(Warehouses--Safety measures)
(Retail trade--Safety measures)

ISMAGILOVA, Rosa Murgaleyevna; TALANOVA, Ya. V.

[Kenya-Uganda; a geographical sketch] Kenia-Uganda;
geograficheskii ocherk. Moskva, Gos.izd-vo geogr.lit-ry,
1959. 58 p. (MIRA 14:2)
(Kenya colony and protectorate) (Uganda)

GLOWINSKI, Mieczyslaw; TAIANOW, Wilhelm

Data on the problem of toxoplasmosis during pregnancy. Gin. polska 29
no.5:498-501 Sept-Oct 58.

1. Z I Kliniki Poloznictwa i Chorob Kobietych A. M. w Zabrze Kierownik:
doc. dr W. Starzewski. Bytom, Batorego 3.

(TOXOPLASMOSIS, in pregn.

causing ment. retardation in inf., case report (Pol))

(PREGNANCY, compl.

toxoplasmosis causing ment. retardation in inf., case re-
port (Pol))

(MENTAL DEFICIENCY, etiol. & pathogen.

maternal toxoplasmosis causing retardation, case report
(Pol))

GLOWINSKI, Mieczyslaw; TALANOW, Wilhelm; SKORCZYNSKI, Marian

Significance of toxoplasmosis in the pathology of pregnancy. Gin.
polska 31 no.1:45-56 Ja-F '60.

1. Z I Kliniki Położnictwa i Chorob Kobietych w Zabrze. Kierownik:
prof.dr W. Starzewski i z Wojewodzkiego Ośrodka Immunopatologii
Ciaży i Noworodka. Kierownik: dr M. Skorczynski.
(PREGNANCY compl.)
(TOXOPLASMOSIS in pregn.)

SOV/137-57-11-20882

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 11, p 34 (USSR)

AUTHOR: Talantov, A.V.

TITLE: Rate of Flame Propagation and Length of Combustion Zone in Turbulent Flow (Skorost' raspostraneniya plameni i protyazhennost' zony goreniya v turbulentnom potoke)

PERIODICAL: Tr. Kazansk. aviats. in-ta, 1956, Vol 31, pp 157-168

ABSTRACT: An examination is made of the combustion of a mixture that is homogeneous both as to phase composition and as to distribution of concentrations in large and micro-volumes thereof. The following model of a combustion process is employed: Turbulent pulsations deform the flame front (FF) in all directions. When the ratio of pulsation velocity w' is higher than the normal U_n the random pulsations may cause volumes of the mixture to break away from the initial, curved FF and to burn in an environment of combustion products. The combustion of these isolated volumes occurs in a manner analogous to "normal" laminar flames, although their surfaces are also curved by pulsations of higher orders. The rate of propagation of the FF, U_t , is described by the equation

Card 1/2

SOV/137-57-11-20882

Rate of Flame Propagation and Length of Combustion Zone (cont.)

$U_t = U_n + A w' / \sqrt{\log_e(1 + w' / U_n)}$, in which A is a coefficient close to unity. The length of the combustion zone, L, for a turbulent combustion jet at the end of the tube may be defined by the equation $L = B \ell_0 w_3 / w' \log_e(1 + w') U_n$, where B is a coefficient of the order of 1, ℓ_0 is the scale of turbulence, w_3 is the velocity in the zone. The length of the zone rises with increase in ℓ_0 and the flow velocity. A rise in U_n and an increase in w' brought about by installation of turbulence stimulators shortens the zone. The course of combustion, based on the hypothesis that volumes burn from the surface at normal speed, is calculated on the equation $r = 3\tau U_n / \ell_0 - 3\tau U_n^2 / \ell_0^2 + \tau^3 U_n^3 / \ell_0^3$, where r is the ratio of the burned volume to the original, and τ is time. The heat intensity of the flame rises with increase in U_n and diminishes with growth in ℓ_0 and in the dimensions of the system.

B.M.

Card 2/2

TALANTOV, A.V.

Designing simple direct-flow combustion chambers. Izv. vys. ucheb.
zav.; av. tekhn. no.2:112-120 '58. (MIRA 11:6)

1. Kazanskiy aviatsionnyy institut, Kafedra teorii aviadvigately.
(Gas and oil engines)

88903

S/124/61/000/001/003/004
AC05/AC01

11.7400

Translation from: Referativnyy zhurnal, Mekhanika, 1961, No. 1, p. 90, # 1B635

AUTHOR: Talantov, A.V.

TITLE: The Combustion in a Turbulent Stream Restricted by Walls

PERIODICAL: "Tr. Kazansk. aviats. in-ta", 1958, Vol. 38, pp. 225-238

TEXT: The author considers combustion in an enclosed stream behind a point-like source of ignition. The existence of an extended zone of combustion is assumed which is characterized by some known time of combustion along the lines of the stream and a known cross distribution of relative velocities and temperatures. The equations of the conservation of mass and momentum as well as the Bernoulli equation for the fresh mixture are adopted; additionally the condition of passage of the mixture through the front boundary of the zone at its every point with a given velocity of turbulent propagation is assumed. These conditions make it possible to calculate, by the trial-and-error method, the coordinates of the front and back boundaries of the zone of combustion, as well as to determine the fields of velocities and pressures. The results of the calculation are pre-

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S/12⁴/61/000/001/003/00⁴
A005/A001

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The Combustion in a Turbulent Stream Restricted by Walls

sented for a specific example with linear cross distributions of velocities and temperatures within the zone, which are compared with the calculation for the front process. Considerations are expressed on the structure of the combustion zone based on the simplified calculation carried out. Experimental data are not presented. There are 6 references.

B. Fidman

Translator's note: This is the full translation of the original Russian abstract.

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PETROV, E.A.; TALANTOV, A.V.

Determining combusting characteristics in a turbulent flow.

Izv. vys. ucheb. zav.; av.tekh. 2 no.1:89-94 '59.

(MIRA 12:3)

1. Kazanskiy aviatsionnyy institut, Kafedra teorii aviadvigately.
(Combustion)

SOV/24-59-2-5/30

AUTHOR: Talantov, A. V. (Kazan')

TITLE: Appraisal of Work of the Simplest Direct Combustion Chamber
(Otsenka raboty prosteyshy pyramotochnoy kamery sgoraniya)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh
nauk, Energetika i avtomatika, 1959, Nr 2, pp 32-37 (USSR)

ABSTRACT: The investigations of Zel'dovich (Ref 1), Tsien (Ref 2),
and others are reviewed, and an approximate method for de-
signing direct combustion chambers with a point or a linear
source of ignition is proposed. The conditions at the entry
to the chamber and the finite size of the combustion time
are allowed for. With the aid of supplementary assumptions
the influence of the conditions at the chamber entry are in-
vestigated. It is found that the heat evolution in the com-
bustion chamber depends on the conditions at the entry and

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Appraisal of Work of the Simplest Direct Combustion Chamber

this fact makes calculations of the size of the chamber somewhat uncertain. There are 7 figures and 2 references, 1 of which is Soviet and 1 English.

SUBMITTED: November 24, 1958.

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SOV/147-59-2-14/20

AUTHOR: Talantov, A.V.

TITLE: Analysis of the Performance of a Simple Straight-Through
Combustion Chamber Under the Conditions of Flight
(Analiz raboty prosteyshay pryamotochnoy kamery
sgoraniya v usloviyakh poleta)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya
tekhnika, 1959, Nr 2, pp 122-133 (USSR)

ABSTRACT: Combustion chambers of the jet engine, when in flight,
operate under variable conditions at the inlet into
the chamber. The variations are particularly large
in the case of overspeeding. The temperatures and
pressures at the inlet to the combustors depend upon
the altitude and the speed of the flight. In addition,
due to the control mechanism employed, neither the
strength nor the temperature of the mixture remain
constant under these variable conditions of flight.
All these factors affect the efficiency of the
combustion chamber and the magnitude of the heat
release (i.e. complete or incomplete combustion).

Card 1/9 The paper analyses the effect of the flight conditions

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Analysis of the Performance of a Simple Straight-Through
Combustion Chamber Under the Conditions of Flight

on the required dimensions of the combustion chamber by relating the characteristics of the combustion to: pressure, temperature, composition of the mixture and the turbulence of the flow inside the combustor on the assumption that the mixture is homogeneous and that vapourization of the fuel as well as its mixing with the air supplied to the combustion chamber are fully realized at the instant when combustion begins. These conditions usually do obtain at very high flight speeds ($M \gg 3$) at the inlet to the combustion chamber. At lower speeds of flight the fuel has not enough time to be fully vapourized but even then the above assumptions represent a fairly good approximation. To begin with the velocity of the flame spread u_f and the time of combustion t are related to the pressure and temperature as given by Eq (1) which is based on Ref 1 and 2., w' being the fluctuating component of the velocity (as superimposed on the normal component of velocity u_H). Now, for the practical cases of turbulent flows when $w'/u_H \gg 1$,

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according to Ref (3) and (4), this can be reduced to Eq (2). Similarly on the basis of Ref 3, 4 and 5, Eq (3) is obtained while by Ref 2, the time of combustion is given by Eq (4) in which ℓ_0 is the turbulence scale. Experiments verify this relation if $B = 3$. Assuming now that the fluctuating speed and the turbulence scale do not depend on the temperature (see Ref 4), Eq (4) may be transformed into Eq (5). Fig 1 shows this relation (in dimensionless form), the broken line being for 200 mm Hg and the full line for 600 mm Hg, and the graphs are compared with the experimental data from Ref 4. Both the theoretical curves and the experimental points indicate a decrease in combustion time as the temperature increases. Since pressure affects not only the normal and the fluctuating components of velocity but also the turbulence scale, hence its total effect on the velocity of the flame

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spreading is given by Eq (6). Fig 2 compares this relation with the experimental data available (Ref 4) the broken line being for 373°K and the full line for 573°K . Again, both the theory and the experiment indicate an increase in combustion time as pressure decreases. When pressure and temperature change simultaneously, Eq (7) may be used. This is derived on the assumption that all parameters are independent from each other. Suffix "0" denotes the initial values at t_0 ; $u_{H\alpha}$ and $u_{H\alpha 0}$ are the normal velocities at any current value of the mixture strength α and at the initial value of α_0 , respectively. These relations will enable one to determine the length of the combustion chamber necessary to complete the combustion process. Employing the analysis of Ref 6 and assuming in addition that the flame thickness is infinitely small, then Eq (8) to (14) may be applied in order to determine the first part (zone) of the combustion chamber length. These equations are based on the following principles: Eq (8) - conservation of

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the energy of the fresh mixture; Eq (9) - adiabatic process; Eq (10) - conservation of energy for the exhaust gases; Eq (11) - conservation of the mass; Eq (12) - momentum relation. The meaning of the symbols is as follows:

τ_c and u_c } dimensionless values of the temperature
or } and velocity of the fresh mixture (referred
 τ_p and u_p } to the conditions at the entry into the
combustion chamber) or of the exhaust gases
respectively;

M_0 - Mach number at the inlet in the combustion chamber;

P - Pressure at the section considered over the pressure at the inlet into the combustion chamber;

q - heat supplied to one kg of air;

η - dimensionless coordinate of the flame front (referred to the half spacing between the flame stabilizers):

r - portion of the heat release produced;

$\Delta \bar{x}$ - dimensionless distance between two neighbouring stations (i-1) and i (referred to the half spacing between the flame stabilizers).

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By summing up all $\Delta \bar{X}$'s the required length \bar{X}_ϕ (from the stabilizers up to the point of contact of the flame fronts) is obtained. The second part (zone) of the combustion chamber (from the point of contact of the flame fronts to the end point of the combustion) is then discussed on the assumption of the theory of Ref 6. Neglecting any changes across the combustor and taking the velocity of the flow along it as $w_3 = w_0 [1 + (\theta - 1)]$, $\theta = T_r/T_0$ being the ratio of the combustion and the initial temperatures and r being the "combustion rate" (its value being determined in Ref 2 as given by Eq (16)), the full length of the second zone is then obtained from Eq (18) in which $B = 3$ as shown by experiments. Based on the above theory some examples are then computed. First a subsonic combustion chamber (Mach numbers from 0.4 to 0.8) working on benzine and employed in flight up to 8,000 m altitude is considered. Further assumptions are as follows: stabilizers pitch $\beta = 40$ mm; turbulence $\epsilon = 0.1$; turbulence scale $l_0 = 0.5$ mm.

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Fig 3 shows the required lengths X_* and X_c versus Mach number for three different altitudes: 0; 5,000 and 8,000 m. Fig 4 shows dependence of the coefficient of the fulness of combustion (and hence of the amount of heat release) for the above engine with the combustion chamber of 1.3 m length. Next a supersonic (Mach numbers from 1 to 4) engine is considered. The results of computations are shown in Figures 5 to 8. These graphs do not refer to a single engine working over the whole range of the speeds but represent different engines, each working at its proper speed of the range. In the computations it was assumed that the velocity coefficient at the inlet into the chamber is 0.2 for the whole range (except for $M = 1$ at which $\lambda = 0.15$) and the coefficient of pressure recovery across the shock at the inlet was taken as 1 for $M = 1$; 0.9 for $M = 2$; 0.7 for $M = 3$ and 0.5 for $M = 4$. The mixture was assumed stochiometric. From Figures 5 and 6 it is

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seen that an engine with a straight-through combustion chamber which works satisfactorily in the subsonic region will encounter serious difficulties at the altitudes above 10 km, as far as the combustion operation is concerned. The required length of the combustion chamber would have to be several meters. In Fig 5 dotted lines represent conditions of constant pressure in the combustion chamber under variable conditions of the flight (i.e. variable speeds and altitudes). Under those conditions the required length of the combustion chamber does not vary much. Fig 7 shows the heat intensity rates (q per unit volume of the combustion chamber and q_p per unit volume and per one atmosphere) as functions of the Mach number for given (constant) altitudes, while Fig 8 represents the same heat intensity rates as functions of the altitude for

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Analysis of the Performance of a Simple Straight-Through
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given speeds of flight. There are 8 figures and
6 Soviet references.

ASSOCIATION: Kazanskiy aviatsionnyy institut, Kafedra teorii
aviadvigateley (Kazan' Institute of Aeronautics,
Chair of Theory of Aircraft Engines)

SUBMITTED: December 1, 1958

Card 9/9

PETROV, E.A.; TALANTOV, A.V.

Investigating basic characteristics of burning of a homogeneous mixture in a turbulent flow. Izv.vys.ucheb.zav.; av.tekh. 2 no.3:91-100 '59. (MIRA 12:12)

1. Kazanskiy aviatsionnyy institut. Kafedra teorii aviadvigatelay.

(Combustion)

S/196/61/000/006/005/014
E073/E535

117-200

AUTHOR: Talantov A. V.
TITLE: Combustion time in a turbulent flow of a uniform mixture
ABSTRACT: Referativnyy zhurnal. Elektrotehnika i energetika,
1961, No. 6, p. 7, abstract 6G50. (Sb. 3-e Vses.
soveshchaniye po teorii goreniya. T. I., M., 1960,
86-90)

PLAT: The mechanism of combustion in a uniform mixture in a
turbulent flow is an open question. The theory of complex laminar
front or surface combustion is based on the conception that
combustion takes place in an infinitely thin front of the laminar
type, which is strongly developed and curved due to turbulent
pulsations in the flow, whilst in the theory of "volume" combustion
it is assumed that the process of combustion proceeds in the
individual intermixing volumes in accordance with the laws of
chemical kinetics. Analysis of accumulated experimental material
enables bringing some arguments which favour the theory of surface
combustion. As an example, the temperature dependence is investi-
gated, taking into consideration pulsations, and it is shown that
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24535

S/147/61/000/002/014/015
E031/E113

11.7200

AUTHOR: Talantov, A.V.

TITLE: On the width of the zone of combustion of a stationary flame in the turbulent flow of a homogeneous mixture

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatcionnaya tekhnika, 1961, No.2, pp. 147-157

TEXT: In his paper "The calculation of a simple combustion chamber", (present journal, 1960, No.1) K.P. Vlasov proposed using the relation between the dimensions of the combustion zone transverse to the direction of flow and the distance from the source of combustion determined experimentally with a turbulent flame to complete the equations of gas dynamics and combustion. The present author considers that there is no foundation for ignoring the relation between the zone of combustion and the normal velocity and the turbulence parameters. The width of the zone of combustion of a stationary turbulent flame depends on the depth of the spark front of the flame under the effect of pulsations in the flow. Considering values of the time long by comparison with the length of a pulsation, and using the relation between the mixing

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21535

On the width of the zone of combustion... 9/147/61/000/002/014/015
EG31/E113

length and the scale of turbulence, an expression can be obtained for the velocity of propagation of the flame. The relation between the width of the zone of combustion and the velocity of propagation of the flame depends on which time is taken as the characteristic time. With the appropriate choice, Vlasov's relation between the width of the combustion zone and the distance from the source of combustion is obtained. It is argued that the time of combustion rather than the time of motion should be taken as the characteristic time. An attempt is made to evaluate the dimensions of the zone based on the work of K. I. Shchelkin and using his picture of the superficial mechanism of combustion (Ref. 4: ZhTF, 13, 1943). Assuming that the combustion time is determined only by the velocity of pulsation and is equal to the mixing time, it is found that the width of the zone is proportional to the scale of turbulence. Again, assuming that the process is characterised by the time of combustion of a mole from the surface with normal velocity, then the dimensions of the zone are proportional to the scale of turbulence and are functions of the relation between the velocity of pulsation and the normal velocity.

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On the width of the zone of

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E031/E113

The two assumptions about the characteristic time are limiting ones, between which the time of combustion must lie. It should be noted that the considerations apply to that part of the flame at which total burning has been achieved on the axis. In the case of a stationary flame in an open space it is not difficult to estimate the effect of broadening, assuming constant axial flow velocity. This is done by considering the mass flow through the zone of combustion and an expression is derived for k , the degree of broadening, which shows that the broadening depends on the relative heating and the ratio r_p/r_m (r is the distance from the axis of the flame and the suffixes refer to the parameters of the fresh mixture (m) and the combustion products (p)). Hence the width of the combustion zone depends on these parameters. It is shown that as the composition of the mixture varies, the width of the combustion zone changes comparatively slowly due to the opposite effect of the normal velocity and the relative heating. The width of the flame must depend on the distance to the point of stabilisation. The width of the combustion zone may also increase due to changes in the flow velocity and the parameters of turbulence because a stationary flame in an open flow extends

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On the width of the zone of combustion... S/147/61/000/002/014/015
EO31/E113

beyond the centre of the flow at distances which are large compared with the diameter of the pipe. A special experiment was made (Ref.10: E.A. Petrov, Dissertation, KAI, 1960) to solve the problem of the effect of the distance from the point of stabilisation on the dimensions of the zone. The results show that the axial length of the zone is independent of the distance from the point of combustion. There are 7 figures and 10 references; 7 Soviet and 3 English. The English language references read:
Ref.2: A. Scurlock, S. Grover. Fourth Symposium on Combustion, Baltimore, 1953.
Ref.3: K. Wohl, L. Shore, H. Rosenberg, C. Weil. Fourth Symposium on Combustion, Baltimore, 1953.
Ref.6: B. Karlovitz, O. Denniston, F. Wells. Fourth Symposium on Combustion, Baltimore, 1953.

ASSOCIATION: Kafedra teorii aviadvigateley, Kazanskiy aviatsionnyy institut (Department of Aircraft Engines, Kazan' Aviation Institute)

SUBMITTED: September 16, 1960

Card 4/4

Investigation of the effect of ... S/147/61/000/004/011/021
E025/E120

the pressure from 0.35 to 1.4 kg/cm² and the temperature was equal to 423 °K. To obtain the best approximation to the conditions of burning in an engine the experiment was carried out on a flow bounded by walls in a chamber of constant section with forced turbulence of the flow. The combustion chamber was a tube of square section 50 x 50 mm of length 1700 mm, cooled externally by water. A very detailed schematic diagram of the experimental arrangements is given. The values of speed of propagation of the flame in the turbulent flow for various speeds of the flow, mixtures and pressures were obtained, and from these were constructed graphs giving the relation between the speed of propagation of the flame and the pressure for various mixtures and flow speeds. A comparison of the nature of the relation between the speed of propagation of the flame and the pressure for various mixtures and flow speeds was made by the use of dimensionless flame propagation velocities and pressure ratios. The effects due to lengthening and shortening the flame are discussed. The following conclusions are arrived at:

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E025/E120

1) The values and nature of the speed of propagation of a flame are approximately the same in a turbulent flow bounded by walls and in open turbulent flow. 2) The speed of propagation of the flame is proportional to the 0.8-th power of the pulsation velocity, taking account of the dependence of the latter on the pressure. 3) Damping of the turbulence is responsible for varying estimates of the effect of the pressure on the speed of the flame for different speeds of flow and mixtures. Hence it is necessary to calculate the speed of propagation of the flame taking account of the normal and pulsation velocities and their dependence on pressure and damping. 4) The speed of propagation of the flame in a closed turbulent flow is in good agreement with theory when the effect of damping of the turbulence is eliminated. 5) The decrease in the speed of propagation of the flame with fall of pressure is one of the causes of decreased efficiency of the processes in the combustion chambers of primary engines in high altitude conditions. There are 10 figures.

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Investigation of the effect of ...

S/147/61/000/004/011/021
E025/E120

ASSOCIATION: Kazanskiy aviatsionnyy institut, Kafedra teorii
aviadvigateley
(Kazan' Aviation Institute, Department of Theory
of Aircraft Engines)

SUBMITTED: April 3, 1961

Card 4/4

YERMOLAYEV, V.M.; TALANTOV, A.V.

Investigating the effect of pressure on the length of the combustion zone in a closed turbulent flow of a uniform mixture.
Izv.vys.ucheb.zav.; av.tekh. 5 no.3:143-156 '62. (MIRA 15:9)
(Combustion)

TALANTOV, A.V.

Mechanism of combustion in a turbulent flow of a homogeneous
mixture. Izv.vyslucheb.zav.; av.tekh. 6 no.3:92-99 '63.
(MIRA 16:10)

IL'YASHENKO, Sergey Mikhaylovich [deceased]; TALANTOV, Aleksey Vasil'yevich; BOLGARSKIY, A.V., doktor tekhn. nauk, retsenzent; BESPALOV, I.V., kand. tekhn. nauk, retsenzent; KLYACHKO, L.A., kand. tekhn.nauk, retsenzent; CHUMACHENKO, B.N., inzh., red.; BONDARYUK, M.M., doktor tekhn. nauk, prof., red.; FOFOV, A.V., red.

[Theory and design of direct-flow combustion chambers] Teoriia i raschet priamotochnykh kamer sgoraniia. Moskva, Mashinostroenie, 1964. 305 p. (MIRA 17:12)

YERMOLAYEV, V.M.; TALANTOV, A.V.

Rate of flame propagation in an open and limited flow of homogeneous
mixture. Izv.vys.ucheb.zav.;av.tekh. 7 no.2:134-141 '64.
(MIRA 17:9)

L 23044-66 EWT(1)/EWP(m)/EWT(m)/EMP(f)/EWA(d)/T/ETC(m)-6/EWA(1) WH/WE

ACC NR: AP6011792

SOURCE CODE: UR/0147/66/000/001/0115/0122

AUTHOR: Zotin, V. K.; Talantov, A. V.

ORG: none

TITLE: The effect of initial temperature on the flame speed in the turbulent flow of a uniform mixture

SOURCE: IVUZ. Aviatsionnaya tekhnika, no. 1. 1966, 115-122

TOPIC TAGS: combustion, propulsion, burning velocity, air breathing engine

ABSTRACT: The temperature of a combustible mixture entering an aviation combustion chamber can vary considerably depending on flight conditions. The temperature can change considerably with the flight velocity and altitude especially in air-breathing engines. Previous studies have dealt with the effect of temperature on the burning velocity but in narrow temperature ranges. Therefore, in the present study, the effect of temperature on the turbulent burning velocity of a homogenous gasoline-air mixture was studied at flow velocities from 20 to 100 m/sec, air-fuel ratios from 1 to 1.6, and initial temperatures from 150 to 550C. The experimental assembly consisted of a burner, 50 x 50 mm in diameter, equipped with recessed flame holders. The air flowing to the burner was preheated by a heat exchanger. The effects of the air excess factor, flow velocity, and temperature of the initial mixture and turbulence on the turbulent burning velocity were measured. The experimental results were

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UDC: 629.194.34:536.463

L 23044-66

ACC NR: AP6011792

correlated by the following formula:

$$\frac{u_T}{u_{T_0}} = \frac{A_1 \theta u_n + \frac{A_2 w'}{\sqrt{\ln \left(1 + \frac{w'}{u_n} \right)}}}{A_1 \theta_0 u_{n_0} + \frac{A_2 w'}{\sqrt{\ln \left(1 + \frac{w'}{u_{n_0}} \right)}}}$$

where u_T is the turbulent burning velocity at T ; u_n is the turbulent burning velocity at T_0 ; $\theta = T/T_0$ (T_0 is the final temperature of combustion products and T_0 , the temperature at the flame front); w' , fluctuating velocity; and u_n is the normal burning velocity. The turbulent burning velocity can be correlated with the temperature at flow conditions of practical interest, i.e., at $w > 50$ m/sec, by the following formula:

$$\frac{u_T}{u_{T_0}} \sim \left(\frac{T}{T_0} \right)^{0.65}$$

which can be used for designing combustion chambers with variable air inlet temperatures. Orig. art. has: 11 figures and 3 formulas. [PV]

SUB CODE: 21/ SUBM DATE: 24Mar65/ ORIG REF: 008/ OTH REF: 001/ ATD PRESS: 4234
Card 2/2

ACC NR: AP6036864

SOURCE CODE: UR/0147/66/000/004/0121/0128

AUTHOR: Gruzdev, V. N.; Talantov, A. V.

ORG: none

TITLE: Ramjet engine aircraft flight regimes ensuring constant conditions for flame stabilization

SOURCE: IVUZ. Aviatsionnaya tekhnika, no. 4, 1966, 121-128

TOPIC TAGS: air breathing engine, ramjet, flame stabilization, combustion

ABSTRACT: Flame stabilization in ramjet combustion chambers by means of bluff bodies depends to a large degree on the physical parameters of the inducted air, i.e., the pressure and temperature, which in turn depend on the flight speed and altitude. An analysis was made to determine what conditions (see Figs. 2 and 3), i.e., Mach number and altitude, the combustion remains stable for a given flameholder size. Based on

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UDC: 536.46;629.194.34

ACC NR: AP6036864

the relationship

$$\bar{d} = f(M, H)$$

which upon derivation gives

$$\frac{dM}{dH} = - \frac{\frac{\partial \bar{d}}{\partial H}}{\frac{\partial \bar{d}}{\partial M}}$$

the following system of equations was derived for \bar{d} and dM/dH . At altitudes $0 < H < 11,000$ m:

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ACC NR: AP6036864

$$\begin{aligned} \bar{d} &= \frac{3,16 \cdot 10^3}{\left\{ (1 - \beta H)^{\frac{n}{n-1}} \left(1 + \frac{k-1}{2} M^2 \right)^{\frac{k}{k-1}} [1 - (M-1,5) 0,178] \right\}^{1,178}} \\ &\times \frac{3,16 \cdot 10^3}{\left[T_{n=0} (1 - \beta H) \left(1 + \frac{k-1}{2} M^2 \right) \right]^{1,178}} \\ \frac{dM}{dH} &= \frac{\frac{2,296n - 1,178}{n-1} \beta \left(1 + \frac{k-1}{2} M^2 \right) [1 - (M-1,5) 0,178]}{(1 - \beta H) \left\{ (2,296n - 1,178) M [1 - (M-1,5) 0,178] - 0,199 \left(1 + \frac{k-1}{2} M^2 \right) \right\}} \end{aligned}$$

and at altitudes $11,000 < H < 25,000$:

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ACC NR: AP6036864

$$\bar{d} = \frac{3.16 \cdot 10^3}{\left\{ p_{H=11000} e^{-\frac{H-11000}{RT}} \left(1 + \frac{k-1}{2} M^2\right)^{\frac{k}{k-1}} [1 - (M-1.5) 0.178] \right\}^{1.118}} \times \frac{1}{\left[T_{H=11000} \left(1 + \frac{k-1}{2} M^2\right) \right]^{1.178}}$$

$$\frac{dM}{dH} = \frac{0.176 \cdot 10^{-3} \left(1 + \frac{k-1}{2} M^2\right) [1 - (M-1.5) 0.178]}{2.08 \cdot M [1 - (M-1.5) 0.178] - 0.199 \left(1 + \frac{k-1}{2} M^2\right)}$$

where T is temperature; M, mach number; H, altitude;

$$\beta = \frac{1}{\frac{n-RT}{n-1}}$$

($n = 1.285$, $R = 287 \text{ J/cal}^\circ\text{K}$ for air); and $\bar{d} = d/d_0$ is the reduced diameter of the

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ACC NR: AP6036864

flameholder. Data calculated by the equations (points) and by a graphical method (curve) are plotted in the Fig. 1.

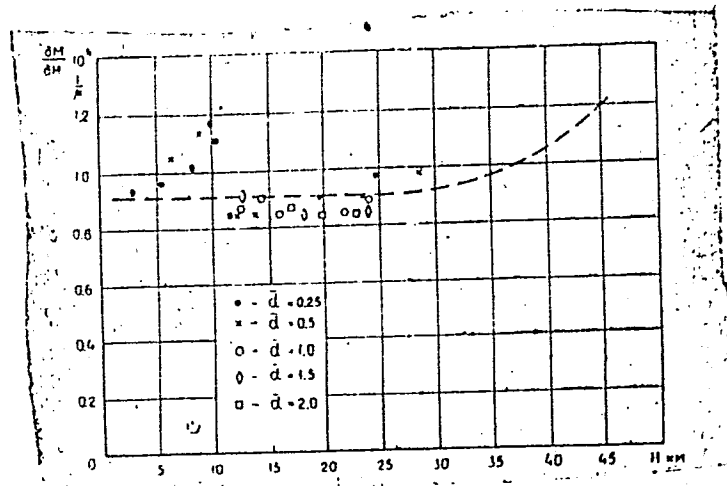


Fig. 1. Increment of velocity as a function of altitude (dM/dH).

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ACC NR: AP6036864

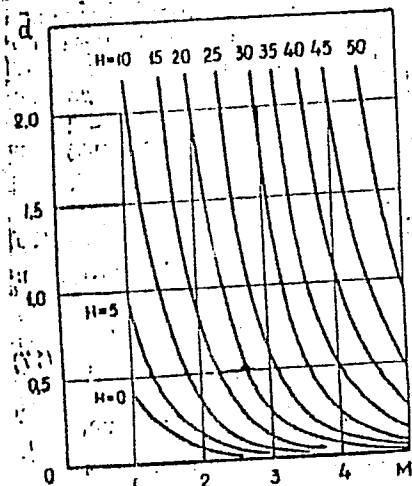


Fig. 2. The calculated dependence of the reduced flame holder diameter \bar{d} on the Mach number M and altitude H .

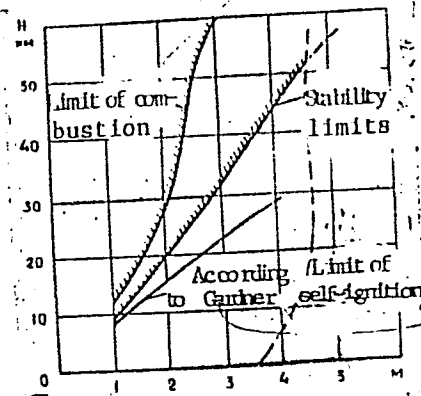


Fig. 3. Limits of ramjet operation in terms of Mach number and the altitude based on the conditions for combustion, flame stabilization, and self-ignition.

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ACC NR: AP6036864

The straight section of the curve in the figure indicates the minimum acceleration required to ensure stable combustion. The straight section of the curve indicates that in this region stable combustion does not depend on the flameholder size (see Fig. 2) nor on the altitude; the velocity increment amounts to about 0.09 M per 1000 m. At altitudes above 30 km, the conditions for stable combustion deteriorate and the minimum required velocity increment increases. Points located above the curve indicate reliable engine operation, and the region below the curve is unsuitable engine operation. Orig. art. has: 17 formulas and 6 graphs.

SUB CODE: 21/ SUBM DATE: 28Oct65/ ORIG REF: 007/ OTH REF: 003/
ATD PRESS: 5107

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TALANTOV, N. V.

TALANTOV, N. V. "The effect of pre-heat temperature and Cutting Speed on the Physical Nature of the Cutting Process and the Workability of certain Aviation Steels and Alloys." Min Higher Education USSR. Kazan' Aviation Inst. Kazan', 1956. (Dissertation for the Degree of Candidate in Technical Science)

So: Knizhnaya Letopis', No. 18, 1956,

SOV/145-58-7/8-21/24

18 (5, 7)

AUTHOR: Talantov, N.V., Candidate of Technical Sciences

TITLE: Expediency of Hot Machining of Metals

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy - Mashinostroyeniye, 1958, Nr 7-8, pp 189-195 (USSR)

ABSTRACT: Machining of heated metals is not a new process; it has been known both in the USSR and abroad since 1931. A number of scientific works has been devoted to this problem, among them the following: V.I. Rukavishnikov, "Machining of Heated Components by Means of Hard Alloy Tools", published in the periodical "Mashinostroitel'", Nr 7, 1936 [1]; M.M. Ioffe, B.A. Kagano-
vich, S.I. Anan'ev and V.V. Fil'chev, "Machining of Metals with Heating of Removed Layer", Collection "Novoye v primenenii tverdykh splavov", Issue Nr 5, 1946 [2]; B.M. Askanazi and G.I. Babot, "Machining of Metals with Induction Heating by High Frequency Currents", "Vestnik metallopromyshlennosti", Nr 10-11, 1939 [3]. The physical process of heated metal cutt-
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ing has been analyzed by: V.D. Kuznetsov in his work "Physics of Solids", Volume 3, 1944 [4], and by A.A. Avakov, "Physical Nature of High-Speed Cutting", Proceedings of the TBIIZhT imeni V.I. Lenin, Issue 6, 1954 [5]. However, in spite of a favorable appraisal, the hot machining method is not, up to the present, applied in modern machine building plants. The main reason for that is an insufficient knowledge of conditions under which the efficiency of this process could be proved. The present article analyzes the influence of heating on the following physical parameters of metal cutting process. Component cutting forces - P_z , P_y , P_x ; coefficient of shaving shrinkage - K ; shaving contact length with the tool front edge - l_k ; temperature of cutting - Θ_p ; and the stability (speed) of the metal cutting tool. All research was carried out on construction steel EI-84, heat-resisting high-alloy steel EI-481 and heat-resisting alloy EI-437. Research on physical nature of heated metal cutting process ✓

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was performed by tools equipped with hard alloy T15K6 plates; stability research was made with tools provided with a plate made from alloys BK8, T15K8 and T30 K4. Parameters of tools were: front angle $\gamma = 0$; main cutting edge inclination angle $\lambda = 0$; main angle in the plane $\varphi = 45$; auxiliary angle in the plane $\varphi_1 = 25^\circ$; rear angle $\alpha = 15^\circ$. In all experiments, the cutting depth $t = 2$ mm; feed $S = 0.31$ mm per turn. The general outlay of the experimental installation is illustrated in Fig 1. In Figs 2-4, the graphs showing the influence of temperature on parameters P_z , k , l_k and θ are given. By analyzing these graphs, following conclusions can be drawn: 1) The higher are the metal mechanical properties and the higher is the value of the vertical cutting force P_z when cutting in cold state - the smaller is the decrease in the intensity of P_z due to pre-heating. 2) For each researched material, there is a specific change of shaving contact length and of shaving coefficient of shrinkage. 3) The

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change in the shaving shrinkage coefficient value and in the contact length is the same for steels EI-84 and EI-481, while for the alloy EI-437 it is different. 4) Intensity of cutting temperature increase is different for diverse materials. In Figs 5-7, stability of cutting tools is shown; it is different for diverse metals, but is always lower as in the case where the machining is done without a preliminary heating of metal. The final conclusion drawn by the author is that the application of pre-heating when machining of metals is not expedient. There are 6 graphs, 1 figure, and 7 references, 5 of which are Soviet and 2 English.

ASSOCIATION: Izhevskiy mekhanicheskiy institut (Izhevsk Mechanics Institute)

SUBMITTED: December 18, 1958

Card 4/4

TALANTOV, N.V.

Physical nature of the effect of cutting speed on the process
of steel cutting. Nauch. dokl. vys. shkoly; mash. i prib. no.2:
171-174 '59. (MIRA 12:12)
(Metal cutting)

TALANTOV, N.V.

Analytical method for the determination of cutting temperature.
Zhur.tekh.fiz. 29 no.1:141-145 Ja '59. (MIRA 12:4)
(Metal cutting)

TALANTOV, N.V., kand. nauk, dotsent; GLUKHOV, Yu.G., inzh.

Effect of the characteristics of contact yield of machined
metal on the wear of cutting tools. Vest. mashinostr. 45
no.4:66-70 Ap '65. (MIRA 18:5)

TALANTOV, V.A., kandidat meditsinskikh nauk (Leningrad, Institutskaya ul., d.6); VINOGRADOV, I.S., laborant

Modifications of neural elements of the synovial membrane in tuberculous gonitis. Vest. khir. 74 no.6:41-44 S '54. (MLRA 7:10)

1. Iz Gosudarstvennogo nauchno-issledovatel'skogo instituta khirurgicheskogo tuberkuleza i kostno-sustavnykh zabolevaniy (dir. prof. P.G. Kornev)

(TUBERCULOSIS, OSTEOARTICULAR, pathology,
knee synovial membrane innervation)

(SYNOVIAL MEMBRANE, innervation,
pathol. in knee tuberc.)

TALANTOV, V.A. (Leningrad)

Feldsher Ivan Stepanovich Vinogradov. Fel'd. i akush. no.1:59-60
Ja '55. (MLRA 8:3)

(VINOGRADOV, IVAN STEPANOVICH, 1884-)

TALANTOV, V.A., kandidat meditsinskikh nauk

Cases of aortic perforation in tuberculous spondylitis. Ortop., travm.
i protez. 17 no.4:57-58 J1-Ag '56. (MLRA 9:12)

1. Iz Leningradskogo instituta khirurgicheskogo tuberkuleza (dir. -
deystvitel'nyy chlen AMN SSSR prof. P.G.Kornev)

(TUBERCULOSIS, SPINAL, compl.

perf. of aorta)

(AORTA, perforation

caused by spinal tuberculosis)

TALANTOV, V.A.

Haliteresis. Ortop., travm. i protez. 20 no.5:39-44 My '59.
(MIRA 12:9)

1. Iz Leningradskogo instituta khirurgicheskogo tuberkuleza
(dir. - deputvitel'nyy chlen AMI SSSR prof.P.G.Kornev).
(OSTEOMALACIA, pathol.
histol. changes (Rus))

TALANTOV, V.A., kand.med.nauk; SAVCHENKO, A.V.

Multilocular echinococcosis of the spine. Ortop., travm. i protez.
20 no.12:53-56 D '59. (MIRA 13:5)

1. Iz Leningradskogo instituta khirurgicheskogo tuberkuleza (dir. -
deystvitel'nyy chlen AMN SSSR prof. P.G. Kornev).

(SPINE diseases)

(ECHINOCOCCOSIS case reports)

EXOTICTA MEDICA Dec 9 Vol 13/10 Surgery Oct. 50

5510. (1232) MORPHOLOGICAL CHARACTERISTICS OF TUBERCULOUS COXITIS
(Russian text) - Talantov V. A. - VESTN. KHIR. 1959, 82/3 (45-51)
Illus. 5

In children there is a marked destruction of articular bones in tuberculous coxitis, whereas in adults the process assumes a slow course without destroying the inner layer to such a degree. In a number of cases there were dense sclerotic sequestra to be found on the articular inner lining, secondary formations of a far advanced arthritis. Tuberculous coxitis both in adult and child brings about a total destruction of joint cartilage in the majority of cases. Reparative processes in children are more marked than those of adults. Tuberculous coxitis is favourably influenced by streptomycin when a minimum of 50-60 g. are used for the treatment before operation.

(IX, 15, 1959)

TALANTOV, V.A., kand.med.nauk (Leningrad)

Reply to Professor M.S.Znamenskii. Ortop.travm.i protez. 21
no.3:76-77 Mr '60. (MIRA 14:3)
(OSTEOMALACIA)

TALANTOV, V. A. (Leningrad)

Morphological characteristics of tuberculosis of the spine.
Arkh. pat. no.9:25-31 '61. (MIRA 15:6)

1. Iz Leningradskogo nauchno-issledovatel'skogo instituta khirurgicheskogo tuberkuleza (dir. -- prof. D. K. Khokhlov, nauchnyy rukovoditel' -- deystvitel'nyy chlen AMN SSSR prof. P. G. Kornev)

(SPINE--TUBERCULOSIS)

TALANTOV, V. A. (Leningrad)

Cystic pneumatosis of the stomach. Arkh. pat. no.12:80-82 '61.
(MIRA 15:7)

1. Iz Leningradskogo nauchno-issledovatel'skogo instituta
khirurgicheskogo tuberkuleza (dir. - prof. D. K. Khokhlov,
nauchnyy rukovoditel' - deystvitel'nyy chlen AMN SSSR prof.
P. G. Kornev)

(STOMACH--DISEASES)

GRATSIANSKIY, V.P., prof.; TALANTOV, V.A.

Is it possible for an articular fissure to expand in osteoarticular tuberculosis? Vest. rent. i rad. 37 no.2:26-29 Mr-Apr '62.

(MIRA 15:4)

1. Iz Leningradskogo nauchno-issledovatel'skogo instituta khirurgicheskogo tuberkuleza (dir. - prof. D.K.Khokhlov, nauchnyy rukovoditel' - deystvitel'nyy chlen prof. P.G.Kornev).

(BONES--TUBERCULOSIS)

(JOINTS--TUBERCULOSIS)

TALANTOV, V.A. Leningrad, ul. Dzerzhinskogo, 40, kv.10)

Does "sinal" resorption of the bone occur? Arkh. anat., gist.
i embr. 43 no.11:85-91 N. '62. (MIRA 17:8)

1. Patologoanatomicheskaya laboratoriya (zav. - V.A. Talantov)
Leningradskogo nauchno-issledovatel'skogo instituta khirurgi-
cheskogo tuberkuleza.

С.А. Белинский, Ленинград, Кировский проспект, д.33-35, кв.104; БИЛАНОВ, В.А.

Elemental villous nodular synovitis. (Orig., trans. & proof.
25 Nov. 1974 Jo. 104. 1975A 13:3)

1. Iz Leningradskogo instituta khirurgicheskogo tuberkuleza (dir. - prof. D.K. Khokhlov, nauchnyy rukovoditel' - dozent, kandidat meditsinskikh nauk AMN SSSR prof. P.G. Kornev).

TALANTOV, V.A. (Leningrad)

Changes in the spinal cord in paralysis of tuberculous spondylitis patients. Ann. pat. 26 No.4-66-71 1971. (MIRA 18:7)

1. Leningradskiy nauchno-issledovatel'skiy institut khirurgicheskogo tuberkuleza (n.a. prof. P.A. Kozlov, nauchnyy rukovoditel' - deystvitel'nyy chlen AMN SSSR prof. P.D. Kozlov).

TALANTOV, V. I.

Talantov, V. I. "Changes in the local resistance of the skin capillaries in infection of the internal organs," Trudy Kuznetsk. gos. in-ta upravleniya vrachey im. Lenina, Vol. XI, 1949 (on cover: 1948), p. 79-110.

See: R-1, 30, 21 May 53, (letopis 'Zhurnal 'nykh Statey, No. 17, 1949).

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USSR / Pharmacology. Toxicology.

Abs Jour : Ref. Zhur - Biologiya, No. 3, 1959, 14086

Author : Fedorov, M.I.; Talantov, V.V.

Inst : -

Title : A Case of Photodeveloper Poisoning.

Orig Pub : Kazansk. med. zn., 1957, No. 2-3, 112-114

Abstract : A case of developer (metol;I) poisoning is described which confirms that I is a hemolytic, methemoglobin-forming poison which induces a number of clinical and pathomorphologic diseases (nausea, vomiting, headache, cyanosis, increased blood viscosity, leucocytosis, jaundice, blood coagulation in the vessels, changes of erythrocyte pigmentation, hemolysis of blood in the vessels and hemorrhages). According to its chemical structure, I is similar to aniline dyes;

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TALANTOV, V.V. (Kazan')

Concerning the symptom of A.I. Kazem-Bek in aneurysm of the heart in connection with A.M. Tokareva's article, "Diagnosis of aneurysm of the heart." Kaz. med. zhur. no. 2:118 Mr-Apr '61. (MIRA 14:4)
(HEART---HYPERTROPHY AND DILATATION) (TOKAREVA, A.M.)

TALANTOV, V.V., assistant; PRONINA, P., student

Myocardial infarctions with an atypical onset. Kaz.med.zhur.
no.4:57-59 J1-Ag '62. (MIRA 15:8)

1. Kafedra gospiatal'noy terapii No.1 (zav. - prof. A.G.Teregulov)
Kazanskogo meditsinskogo instituta.
(HEART--INFARCTION)

TALANTOV, V.V.

Pachycarpine poisoning. Sov.med. 26 no.7:135-138 J1 '62.
(MIRA 15:11)

1. Iz kafedry gosptal'noy terapii (zav. - zasluzhennyy deyatel'
nauki prof. A.G.Teregulov) i 1-y gorodskoy bol'nitsy Kazani
(glavnyy vrach Z.A.Sinyavskaya).
(PACHYCARPINE---TOXICOLOGY)

TALANTOV, V.V., kand.med. nauk

Current viewpoints on the value of the indices of acid formation and secretory function of the stomach in peptic ulcer.
Kaz.med.zhur. no.3:95-99 My-Je'63. (MLA 16:9)

1. Kafedra gospiatal'noy terapii no.1 (zav. - prof. A.G. Teregulov) Kazanskogo meditsinskogo instituta.
(PEPTIC ULCER) (GASTRIC JUICE)

1. Iz khranilishcha (nazv. - prof. S.V. Krasovskiy).

Sobremennye metody i priemy razrabotki. Sov. med. 21
(1986-87) 11-12

1. Iz khranilishcha (nazv. - prof. S.V. Krasovskiy)
Voprosy razrabotki i isledovaniya v oblasti eksperimental'-
noy endokrinologii (direktor - prof. Ye.A. Zaytseva).